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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,242	10/24/2003	Samuel N. Crane JR.	9501-71831	1380

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EXAMINER	
HANDAL, KAITY V	
ART UNIT	**PAPER NUMBER**
1764	

DATE MAILED: 04/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/693,242	CRANE ET AL.	
	Examiner	Art Unit	
	Kaity Handal	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) *1-11 and 21-28* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *12-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-28* are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2/23/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

   I. Claims 12-20, drawn to apparatus, classified in class 422, subclass 197R.

   II. Claim 1-11 and 21-28, drawn to method, classified in class 48, subclass 131.

2. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another and materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case, the process as claimed can be practiced by another and materially different apparatus, one which does not require having a controller electrically coupled to air/fuel assembly.

Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are independent or distinct for the reasons given above and the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

During a telephone conversation with Mr. Shawn Bauer on 3/27/2006 a provisional election was made without traverse to prosecute the invention of group I, claims 12-20. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-11 and 21-28 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Specification

3. Abstract is objected to by the examiner.

Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:
(1) if a machine or apparatus, its organization and operation;

(2) if an article, its method of making;
(3) if a chemical compound, its identity and use;
(4) if a mixture, its ingredients;
(5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bauer (US 2004/0050345 A1) and further in view of Smaling (US 2003/0200742 A1).

With respect to claims 12 and 18, Bauer teaches a plasma fuel reformer (fig. 3, 14) (page 1, paragraph [0012], lines 7-9) having an air/fuel input assembly (not shown) (page 2, paragraph [0020]) and a soot trap/emission abatement device (24), and a reformer controller (26) electrically coupled to the air/fuel input assembly (not shown) (page 2, paragraph [0020]), the controller comprising (26) a processing unit (28), and a memory unit (30), electrically coupled to the processing unit (28) (page 2, paragraph [0019], lines 1-5), the memory unit (30) having stored therein a plurality of instructions which (page 2, paragraph [0018], lines 1-6), when executed by the processing unit (28), causes the processing unit (28) to: operate the air/fuel input assembly so as to advance a first air/fuel mixture with a first air-to-fuel ratio into the fuel reformer (page 2, paragraph [0016], lines 9-19), and operate the air/fuel input

assembly so as to advance a second air/fuel mixture having a second air-to-fuel ratio greater than the first air-to-fuel ratio into the fuel reformer (page 2, paragraph [0022]).

Bauer fails to show wherein said controller causes said processing unit to determine if a soot purge of the soot trap/emission abatement device (24) is to be performed and generate a purge-soot signal in response thereto. Smaling teaches an apparatus (fig. 4) for regenerating a soot particulate filter (76) comprising a reformer/plasmatron (54), a controller (100) and an emission abatement device (52) which utilizes pressure sensors (104) in order to determine when the filter assembly requires regeneration (page 5, paragraph [0042], lines 1-6) in order to regenerate the soot particulate filter (76) (page 5, paragraph [0045], lines 21-24).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the controller in Bauer's apparatus to cause said processing unit to determine if a soot purge of the soot trap/emission abatement device (24) is to be performed and generate a purge-soot signal in response thereto, as taught by Smaling, in order to regenerate the soot particulate filter.

With respect to claim 13, Bauer teaches wherein the air/fuel input assembly comprises a fuel injector, and the reformer controller is electrically coupled to the fuel injector (page 2, paragraph [0020], lines 6-15).

With respect to claim 14, Bauer teaches wherein the air/fuel input assembly comprises an electrically-operated air inlet valve, and the reformer controller is electrically coupled to the air inlet valve (page 2, paragraph [0020], lines 6-15).

With respect to claims 15-16, Smaling further teaches wherein said controller (110) comprises a pressure sensor/(which directly is a function of the amount of soot within the soot trap) to sense the pressure drop across the soot trap, wherein the plurality of instructions, when executed by the processing unit, further causes the processing unit to: generate a pressure-reached control signal when the pressure drop across the soot trap reaches a predetermined level, and operate the air/fuel input assembly to advance the second air/fuel mixture in response to generation of the pressure-reached control signal (page 5, paragraph [0045]).

With respect to claim 17, Smaling further teaches wherein the plurality of instructions, when executed by the processing unit, further causes the processing unit to: determine when a predetermined period of time has elapsed since soot was last purged from the soot trap, response thereto, and generate a time-lapsed control signal, and operate the air/fuel input assembly to advance the second air/fuel mixture in response to generation of the time-lapsed control signal (page 5, paragraph [0046], lines 10-13).

With respect to claim 19-20, Bauer as modified fails to show wherein the fuel reformer comprises a housing defining a reformate gas outlet, and the soot trap is positioned within the housing at a position upstream of the reformate gas outlet and wherein the soot trap with in a conduit fluidly coupled to the fuel reformer. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make Bauer's reformer and soot filter/emission abatement device

integral (in one housing). Such arrangement does not impart any patentability of claimed apparatus. MPEP 2144 VB.

In re Larson, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965) (A claim to a fluid transporting vehicle was rejected as obvious over a prior art reference which differed from the prior art in claiming a brake drum integral with a clamping means, whereas the brake disc and clamp of the prior art comprise several parts rigidly secured together as a single unit. The court affirmed the rejection holding, among other reasons, "that the use of a one piece construction instead of the structure disclosed in [the prior art] would be merely a matter of obvious engineering choice."); but see *Schenck v. Nortron Corp.*, 713 F.2d 782, 218 USPQ 698 (Fed. Cir. 1983) (Claims were directed to a vibratory testing machine (a hard-bearing wheel balancer) comprising a holding structure, a base structure, and a supporting means which form "a single integral and gaplessly continuous piece." Nortron argued that the invention is just making integral what had been made in four bolted pieces. The court found this argument unpersuasive and held that the claims were patentable because the prior art perceived a need for mechanisms to dampen resonance, whereas the inventor eliminated the need for dampening via the one-piece gapless support structure, showing insight that was contrary to the understandings and expectations of the art.).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaity Handal whose telephone number is (571) 272-8520. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KH

3/29/2006

ALEXA DOROSHENK NECKEL
PRIMARY EXAMINER